Thought for the Day:

"The EPA said it is aware of 485 landfill gas projects in 44 states that together are collecting 85 billion cubic feet of gas and generating 12 billion kilowatt hours of electricity — roughly the same as an average U.S. nuclear power plant."

House Energy and Technology Committee Hearing
Room 519 House Office Building
HB5334 - Tuesday, November 3, 2009, 8:30 a.m.
Waste Management Testimony in support of HB5334

Mr. Chairman and Members of the Committee,

Good morning, my name is Tom Horton. I am Vice President of Midwest Public Affairs at Waste Management. Waste Management operates 16 landfills in Michigan in addition to transfer stations, collection companies and recycling facilities. The company is the largest recycler and provider of solid waste services in Michigan and across North America.

Landfill gas-to-energy projects provide dependable and steady base load power sources of renewable energy. Landfill gas powered energy is available throughout the operating life of a landfill and for a significant period of time after site closure. Waste Management has eight landfill gas to energy projects in Michigan. Four produce electricity, fed directly into the state's power grid. Two landfills power a GM and Ford plant, one pipes gas directly into the Natural gas grid and one supplies gas to power the energy needs for a Michigan based soy bean processor.

Waste Management supports HB5334.

First and foremost, I urge you to look at this legislation through the lens of your local communities. They view the 1995 yard waste ban as an unfunded mandate that annually costs Michigan communities millions of dollars to separately collect and dispose of yard waste. Local governments see HB5334 as a common sense idea in difficult financial times that returns control of managing yard waste to locally elected officials.

HB5334 places no yard waste handling requirements on local communities. They are free to continue separately collecting and composting yard waste if they determine that option best serves their residents. HB5334 gives municipalities the added option of picking up yard waste and trash together for deposit at a qualified energy production facility.

HB5334 Benefits local communities:

1. *Return control of yard waste programs to local communities*
2. *Save cities, townships and villages money by allowing them to eliminate separate collection of yard waste. The cities of Farmington Hills, Farmington, Wixom and Southfield together would save almost one million dollars over five years.*
3. *Reduce the number of solid waste collection trucks picking up waste material.*
4. *Eliminate the headaches and costs communities incur annually dealing with winter yard waste disposal issues.*
5. *In addition to lowering municipal solid waste program costs,* HB5334 *will increase the amount of renewable energy produced in the state and cause a mini construction boom in landfill energy facilities. If* HB5334 *becomes law, companies like mine will spend tens of millions of dollars to construct new gas wells, piping systems and energy plants to comply with the bill's technical standards that require 70% of a landfill's gas production be converted to renewable energy.*

HB5334 is important because it recognizes, just as our solid waste policy states, that waste is a resource. We can unlock this resource and increase Michigan's production of renewable energy.

Critics of HB5334 may suggest the quantity of power produced from landfill gas is insignificant or the methodology is a step backwards in the hierarchy of solid waste processing. Nothing could be further from the truth. What this bill unlocks is the beginning of investment in a rapidly expanding world of green energy from waste. Legislation like HB5334 initiates an important first step in uncovering waste gasification's potential. The synthetic gas produced from the decomposition of waste can be turned into electrical energy, liquid fuels, industrial waxes and a host of other products that currently rely on petroleum for their creation.

Everyone recognizes that investment in wind and solar will lead to breakthroughs in supporting technologies like batteries and generators. These may be the key to developing affordable home sized units or concepts that allow these forms of power to reliably supply industrial facilities.

That's why early stage investment in all forms of renewable energy, including landfill gas, is so important. What that investment returns or how much power is produced today is not necessarily where we should focus our attention. Rather, we should understand that it will drive innovation and creativity in areas we can't yet define and from that innovation, changes will come, big changes too.

I'm already observing this beginning to happen from my position inside the solid waste industry. The renewable energy focus, driven by renewable energy portfolio standards, climate change initiatives and the country's desire to utilize petroleum alternatives, is driving innovation in a way not experienced before. The focus on utilizing landfill gas is a prime example. Until a relatively short time ago, landfill gas was flared or a portion might be used to generate electricity or meet thermal needs. It was pretty basic stuff.

Today, it is understood that landfill gas or synthetic gas from any form of waste destruction can be transformed (the miracle of chemistry) into a multitude of desirable energy products. With oil at today's prices, landfill gas can be economically converted to liquid natural gas, diesel fuel and fuel supplements.

The solid waste industry is investing in alternative processing technologies oriented around the gasification of waste products and the beneficial use of the resulting waste gas. Several of Waste Management's most important 2009 press releases related to gasification or alternative fuel production from waste. Some of these things are very futuristic and others are closer to the core of what we do already. Let me give you some examples.

One of the things the industry is working on is the development of liquid fuel from landfill gas. Through a joint venture with the LINDE Group, Waste Management built a plant that converts landfill gas into liquefied natural gas (LNG). The grand opening of this facility at the Altamont Landfill in Livermore, California occurs next week. At full capacity, it will produce 13,000 gallons of LNG per day from landfill gas and power over 300 recycling and waste collection trucks we operate in the area. Diesel fuel consumption can be reduced by over four million gallons per year with a big impact on greenhouse gas emissions.

We've been working on a similar project at our Oklahoma City landfill to convert landfill gas into a cleaner burning diesel fuel for our trucks. After final testing, one of these fuel producing units is scheduled for installation in Michigan in 2010.

Earlier this year a joint venture with InEnTech was announced. This partnership will develop plasma gasification technology to process waste from the country's increasingly segmented commercial and industrial waste streams to produce a range of renewable energy and environmentally beneficial fuels as well as generate electricity from gas similar to landfill gas.

One of Waste Management's sustainability goals is tripling the amount of recyclables we manage. One way to do this is to recycle things we have never recycled before. We've actually developed a process, powered by landfill gas, to recycle old roof shingles into an asphalt product. We're piloting this concept right now in Austin, Texas, at the Williamson County Landfill. It is our intent to bring this technology to Michigan.

The point of sharing this with you is to emphasize that none of these concepts proved themselves commercially viable before we began investing in them. We continue to pour millions of dollars into their development because we are convinced that somewhere in the process we will discover the key to their commercialization and be able to scale up their ability to produce more of what they are intended to create.

HB5334 drives this kind of investment and technology development. Due to the 70% beneficial use requirement in HB5334, the landfill industry will be required to invest tens of millions of dollars in new facilities to remain compliant. This will drive technology and innovation in landfill gas projects as the industry seeks to maximize gas capture and energy production.

The same set of drivers that are causing so much investment to flow into gasification and alternative fuels will drive the way landfill gas projects will be developed under this piece of legislation and will open the door to a whole new wave of innovation surrounding the use of landfill gas. To me, this is why HB5334 is an important piece of legislation. It's not about the power it produces today; it's all about the power it will unleash in the future.

Thank you for the opportunity to share my thoughts with you.

Tom Horton, Vice President, Midwest Public Affairs
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Closing Thought:

A number of months ago, Congressman Gary Peters appeared on national television, in a combined effort with locally elected officials, to convince GM to retain the Orion Assembly plant in Oakland County. He stated, "GM should continue operating the Orion assembly plant for two reasons. It is located in the middle of the automotive supply chain and is ***powered by green energy gas piped into the plant from the landfill across the street.*** *GM retained the Orion facility.....*

Golder Associates

TECHNICAL MEMORANDUM

Date: October 6, 2009

Project No.: 093-88807

To: Tom Horton

Company: Waste Management, Inc.

From: Carolyn Powrozek

cc: Paul Sgriccia

Email:

RE: COMPOST FACILITY SURVEY

EXECUTIVE SUMMARY

Golder Associates Inc. (Golder) is providing this technical memorandum to summarize the research conducted regarding the composting facilities in Southeast Michigan. Golder was requested to limit the review to Macomb, Oakland, St. Clair and Wayne Counties. This technical memorandum includes information such as registration requirements, number of facilities, type of waste received, where compost is generated, environmental protection standards, required monitoring and recorded violations for each facility.

There are 17 registered composting facilities in Southeast Michigan, with only 15 currently operating or receiving any materials. A summary of what was noted during the regulatory review included:

- Eleven of seventeen facilities are open to the general public,
- Three of seventeen facilities are municipality owned and only accept from their residents,
- Fourteen of seventeen facilities accept less than 50,000 cubic yards annually, partially due to the size of the facility, and
- Two local governments are restricting future composting operations due to odor complaints and/or nuisance conditions.

Regulatory concerns and recorded violations include:

- insufficient record keeping,
- great than 5,000 cubic yards on any acre of property,
- insufficient storm water management,
- strong odors,
- insufficient turning of compost piles,
- storage of non-compostable materials, and
- quality of finished composted material.

A summary for each county is included in Figure 1 and Table 1. Each county's solid waste management plan reported the estimated annual quantity of yard clippings which is provided below. In addition, the volume of yard clippings capable of being accepted and/or stored by the currently registered and operating composting facilities is provided below. The following is a breakdown for each county:

- Macomb County
  - Reported volumes generated is approximately 1,000,000 cubic yards annually.
  - Registered facilities are capable of accepting/storing approximately 75,000 cubic yards.
- Oakland County
  - Reported volumes generated is approximately 850,000 cubic yards annually.
  - Registered facilities are capable of accepting/storing approximately 700,000 cubic yards.
- St. Clair County
  - Reported volumes generated is approximately 300,000 cubic yards annually.
  - Registered facilities are capable of accepting/storing approximately 285,000 cubic yards.
- Wayne County
  - Reported volumes generated is approximately 1,300,000 cubic yards annually.

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Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

- Registered facilities are capable of accepting/storing approximately 223,500 cubic yards.

SUMMARY OF COMPOSTING REGULATIONS

Act 212 of 2007 (amended Part 115, Solid Waste Management, of the Natural Resources Environmental Protection Act (NREPA) Act 451 of 1994) took effect on March 26, 2008. In response to Act 212, the Michigan Department of Environmental Quality (MDEQ) prepared a flow chart to determine whether a composting facility needs to register with the MDEQ. Once it has been determined that a site should register with the MDEQ, a Composting Facility Registration Form is to be completed and submitted to the MDEQ. Each registration remains active for three years. Each registered composting facility is required to submit an Annual Reporting Form for the previous fiscal year (October 1 to September 30), which is due every year on October 30. A copy of the yard clippings management options, the Composting Facility Registration Form and the Composting Facility Annual Report Form is included as Attachment A.

Isolation Distances

Operations must remain at least:

- 50 feet from a property line,
- 200 feet from a residence, and
- 100 feet from a body of surface water, including a lake, stream or wetland.

In addition to the items listed above, if a site is in operation after December 1, 2007 the site cannot be located in the 100 year floodplain and the operations must remain at least:

- 2,000 feet from a type I or type IIA water supply well,
- 800 feet from a type IIB or type III water supply well,
- 500 feet from a church or other house of worship, hospital, nursing home, licensed day care center or school (other than a home school), and
- 4 feet above groundwater.

A copy of the Yard Waste Composting Isolation Distances is provided in Attachment B.

Quantity of Composting Material Located On-Site

- Unless approved by the MDEQ, no more than 5,000 cubic yards of yard clippings and other compostable material, compost and residuals should be present on any acre of property.
- The site does not accumulate yard clippings for a period of over 3 years unless the facility demonstrates that it has the capacity and receives approval by the department.

Record Keeping

A copy of the Compost Volume Tracker, Composting Facility Operational Records and the Yard Clippings Composting Recommended Testing Parameters are provided in Attachment B. The following forms and reports should be available upon request.

- Records identifying the volume of yard clippings and other compostable material accepted by the facility and the volume of yard clippings, and other compostable material and of finished compost transferred off-site each month.
- Records demonstrating that the composting operation is being performed in a manner that prevents nuisances and minimizes anaerobic conditions, such as carbon-to-nitrogen ratios, quantity, temperature, moisture content and lab analysis of finished products.

Miscellaneous Items

- Finished compost does not contain more that 1% by weight of foreign matter that will remain on a 4 millimeter screen.
- Yard clippings that are collected in bags other than paper bags should be removed from the bags and the bags properly disposed of at the end of each business day.
- The site prevents pooling of water by maintaining proper slopes and grades.
- The site properly manages storm water runoff.
- The composting operation does not attract rodents or other vectors.

REGISTERED COMPOSTING FACILITIES

A list of MDEQ registered composting facilities is provided in Attachment C. There are currently 17 registered composting facilities in the MDEQ Southeast Michigan District Area. The Southeast District includes Macomb, Oakland, St. Clair and Wayne Counties. Of these 17 registered composting facilities, only 15 are currently operating or receiving any materials. Golder conducted a Freedom of Information Act (FOIA) review of the files for each of the registered composting facilities in the MDEQ Southeast Michigan District Area. Golder reviewed the files at the MDEQ Lansing and Southeast Michigan District Offices. In addition, Golder also spoke with various state, county and local governmental agencies. Golder reviewed the files for the following information:

- Registration Form
- Annual Report
- Site Inspections
- Violation Notices and Letters of Warning
- Complaints

A summary of the 17 registered composting facilities in the Southeast Michigan is described below:

- Facility sizes range from 0.7 to 78 acres. Unless noted during a MDEQ site inspection, facility sizes are based on registration form and may indicate the property size and not necessarily the operating size.
  - Three facilities of unknown size.
  - Two facilities less than 5 acres.
  - Nine facilities between 5 to 30 acres.
  - Three facilities greater than 30 acres.
- Materials received from October 1, 2007 to September 30, 2008:
  - Seven facilities received less than 5,000 cubic yards.
  - Seven facilities received between 5,000 and 50,000 cubic yards.
  - Three facilities received greater than 50,000 cubic yards.
- Where the yard clippings are coming from:
  - Three facilities are unknown.
  - Three facilities are municipality owned composting facility (it is unknown whether they would allow materials from outside city limits).
  - Ten facilities are supplied by municipality, contracted or commercial haulers.
  - One facility is open to general public.

- Two facilities are for members only or by invitation.

- Golder noted these common violation notices and complaints during the FOIA review:
  - Greater than 5,000 cubic yards present on any acre of property,
  - Accumulated yard clippings for a period greater than 3 years,
  - Insufficient storm water management,
  - Odor complaints, and
  - Insufficient record keeping.
- Miscellaneous municipality information:
  - City of Waterford closed their composting facility following the promulgation of Act 212 which mandated stringent and costly requirements.
  - City of Auburn Hills recently adopted a City Ordinance restricting the ability for a composting facility to operate within the city limits. The one facility that was in operation was denied a permit by the city and is no longer in operation.
  - City of White Lake has filed a petition to close one of the facilities located in White Lake due to the numerous complaints that remain unresolved.
- Based on conversations with state, county, and local agencies the common concerns over composting facilities include:
  - Odor,
  - Amount of yard clipping per acre,
  - Insufficient turning of composting piles,
  - Storage of non-compostable materials on-site for long durations, and
  - Quality of the finished composting material.

ESTIMATED ANNUAL VOLUME OF YARD CLIPPINGS PER COUNTY

Golder reviewed the Solid Waste Management County Plans for Macomb, Oakland, St. Clair and Wayne County. Macomb, Oakland and St. Clair County estimated yard clippings per ton. Golder converted the tons to cubic yards utilizing the most conservative values from *Geotechnology of Waste Management* (Oweis and Khera). Each county solid waste management plan reported the following estimated annual quantity of yard clippings:

- Macomb County reported 1,000,000 cubic yards
- Oakland County reported 850,000 cubic yards
- St. Clair County reported 300,000 cubic yards
- Wayne County reported 1,300,000 cubic yards

FUTURE LEGISLATION

The Composting Rules Workgroup (comprised of MDEQ and industry regulators) is currently reviewing future legislation regarding composting facilities. The draft rules being considered would require composting facilities to monitor for potential groundwater and surface water impacts. Based on the size of the site, the draft rules would also require the construction of an impermeable pad for the operations, or the issuance of a groundwater discharge permit under Part 31 of NREPA. Additional record keeping and isolation distances would also be required.

SUMMARY

There are 17 registered composting facilities in Southeast Michigan. Of these 17 registered composting facilities, only 15 are currently operating or receiving any materials. A summary of what was noted during the regulatory file review included:

- Eleven facilities are open to the general public,
- Three of the facilities are municipality owned and only accept from their residents,
- Fourteen accept less than 50,000 cubic yards annually, partially due to the size of the facility.
- Two local governments are restricting future composting operations due to odor complaints and/or nuisance conditions.

A brief summary for each county is included in Figure 1 and Table 1. Regulatory concerns and recorded violations included:

- insufficient record keeping,
- greater than 5,000 cubic yards on any acre of property,
- insufficient storm water management,
- strong odors,
- insufficient turning of composting piles,
- storage of non-compostable materials, and
- quality of finished composted material.

Based on the Solid Waste Management County Plans for each county, the estimated generated yard clippings for each county exceeds the quantity of yard clippings that the current registered composting facilities can accept based on the acreage of their facility. In addition, future legislation may cause additional facilities to close due to the additional monitoring and reporting requirements.

REFERENCES

- Geotechnology of Waste Management, Issa S. Oweis and Raj P. Khera, 1990
- Macomb County Solid Waste Management Plan, Approved by MDEQ, March 13, 2000.
- Oakland County Solid Waste Management Plan, Approved by MDEQ, June 24, 2003.
- St. Clair County Solid Waste Management Plan, Approved by MDEQ, May 4, 2001.
- Wayne County Solid Waste Management Plan, Approved by MDEQ, November 7, 2002.

Attachments: Table 1 – Summary of Composting Facilities in Southeast Michigan
Figure 1 – Summary of Composting Facilities in Southeast Michigan
Attachment A – Yard Clippings Management Options
Composting Facility Registration Form
Composting Facility Annual Report Form
Attachment B – Yard Waste Composting Isolation Distances
Composting Volume Tracker
Composting Facility Operational Records
Yard Clippings Composting Recommended Testing Parameters
Attachment C - List of MDEQ Registered Composting Facilities
Summary of Each Registered Composting Facility in Southeast Michigan
Attachment D – Documents from FOIA Review of the Composting Facilities in the Southeast Michigan

November 2, 2009

House Energy and Technology Committee
Lansing, Michigan 48912

Re: HB 5334 – Yard Waste Ban Exemption

Dear Representatives,

The Michigan Environmental Council was established in 1980 and is a coalition of environmental, public health and faith based groups from across Michigan. We have worked in a variety of areas including waste disposal and energy policy since our inception. This legislation involves the intersection of the two policy arenas and thus requires careful analysis.

We worked on the 1995 legislation that placed the ban on yard waste in Michigan. We supported the ban because first and foremost – yard waste is not trash. When properly handled, yard waste is good for the environment. That has not changed. Grass clippings if not collected and allowed to return to the lawn leads to a healthier lawn that needs less watering. Secondly, all yard waste when combined and composted creates a soil enhancement that can benefit gardens and green spaces around the home.

In-vessel composting of organic waste is also used to capture both organic gases for the purpose of energy production, and still have a by-product of soil enhancement materials. This proposed legislation is a step in the wrong direction in the management of organic materials.

Landfills, on the other hand, are a source of toxic air pollutants, a potential risk to drinking water and can be a nuisance lowering the property value of nearby homes. Therefore, absent a clear showing of other benefits, the default should be to reject any policy that leads to the construction of more landfills in our communities. The legislation also will be an administrative nightmare, making enforcement of the yard waste ban virtually impossible, especially in those communities that send waste to a variety of facilities.

Of also critical importance these days is the loss of jobs that will occur due to this bill. This bill will lead to some composting companies closing their doors, people losing their jobs, and significant losses by those who have financed expensive composting

machinery. Educational efforts over the last twenty years of the value of mulching mowers, backyard composting and soil enrichment will be undermined.

There has also been some misinformation on the amount of energy that will be generated. If all major landfills in the state put in gas collection systems we would have approximately 270 MW of capacity. Adding yard waste to those landfills only increases that capacity to around 300 MW. Therefore, adding yard waste will only lead to an approximate 30 MW increase in landfill gas capacity.

Lastly, including yard waste into landfills would have a net impact of increasing greenhouse gases into our atmosphere. This is because the breakdown of these materials in the low oxygen landfill setting creates methane instead of carbon dioxide. Methane is a much more powerful greenhouse gas than carbon dioxide (23 times more). This fact coupled with relatively low gas collection rate of landfills leads to a net increase in greenhouse gases. The overall projected increase in renewable energy of approximately only 30 MW annually is made meaningless by the increase in greenhouse gases.

More greenhouse gases, more landfills and more layoff notices make this bill bad policy for the state of Michigan. Instead Michigan should be exploring policies that would make us a clean energy leader around the country. We urge members to oppose HB 5334.

Sincerely,

James Clift, Policy Director